



# A VIRAL MARKET UPDATE: LEARNING DURING A CRISIS

Glimmers of light?



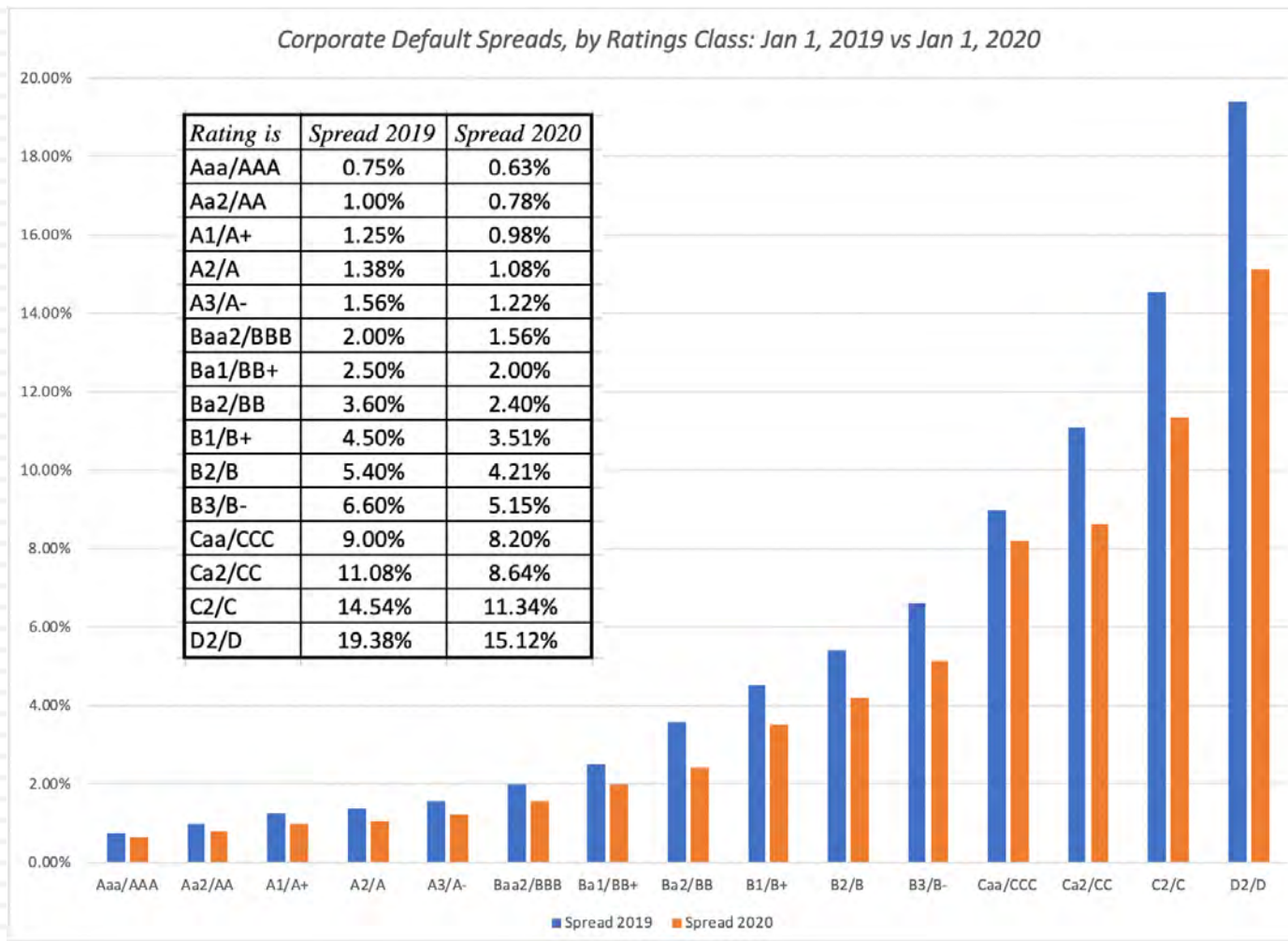
# Days of Innocence

My start of the year update on markets

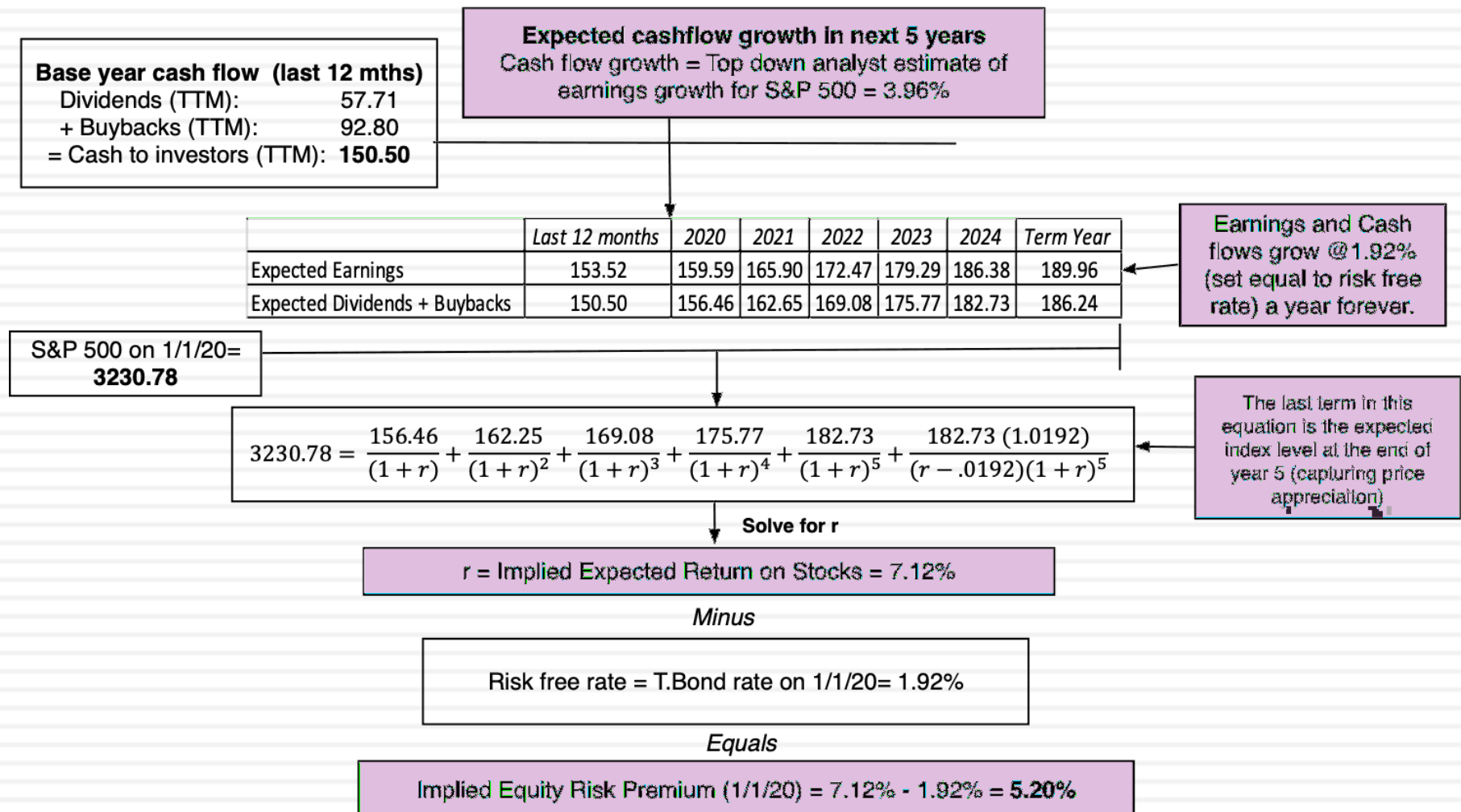
# The Price of Risk

- When you invest in fixed income securities (bonds), your compensation takes the form of a default spread, i.e., what you charge over the riskfree rate to invest in that bond.
- When you invest in equities, the payoff to taking risk comes in the form of an equity risk premium, i.e., the premium you demand over and above the risk free rate for investing in equities as an asset class.
- The default spread is a function of what investors believe is the likelihood that borrowers will fail to make their contractually obligated payments, and it will rise and fall with the economy. The equity risk premium is a more complex number and I think of it as the receptacle for everything in the market.

# The Default Spread at the start of 2020



# A Forward-looking Estimate on January 1, 2020





# Damage Assessment: May 1, 2020

# Macro Review: Equity Indices

|                | Index           | Country/Region | Level on 2/14 |        |       | % Change |         |           |          |            |
|----------------|-----------------|----------------|---------------|--------|-------|----------|---------|-----------|----------|------------|
|                |                 |                | 14-Feb        | 20-Mar | 1-May | 4/24-5/1 | 4/1-5/1 | 2/14-3/20 | 3/20-5/1 | 2/14 - 5/1 |
| Americas       | S&P 500         | US             | 3214          | 2305   | 2831  | -0.21%   | 12.02%  | -28.28%   | 22.82%   | -11.92%    |
|                | NASDAQ 100      | US             | 9624          | 6994   | 8718  | -0.78%   | 14.18%  | -27.33%   | 24.65%   | -9.41%     |
|                | TSX             | Canada         | 17848         | 11852  | 14620 | 1.39%    | 11.62%  | -33.59%   | 23.35%   | -18.09%    |
|                | IPC Mexico      | Mexico         | 45000         | 34270  | 36470 | 6.51%    | 5.54%   | -23.84%   | 6.42%    | -18.96%    |
|                | iBovespa        | Brazil         | 114381        | 67069  | 80506 | 1.05%    | 10.25%  | -41.36%   | 20.03%   | -29.62%    |
| Europe         | FTSE 100        | UK             | 7409          | 5191   | 5763  | 0.19%    | 5.16%   | -29.94%   | 11.02%   | -22.22%    |
|                | DAX             | Germany        | 13744         | 8929   | 10862 | 3.31%    | 9.32%   | -35.03%   | 21.65%   | -20.97%    |
|                | CAC 40          | France         | 6069          | 4131   | 4559  | 2.43%    | 3.71%   | -31.93%   | 10.36%   | -24.88%    |
|                | S&P Europe 350  | Europe         | 1731          | 1181   | 1351  | 1.99%    | 7.15%   | -31.77%   | 14.39%   | -21.95%    |
| Asia           | Nikkei 225      | Japan          | 23688         | 16553  | 19619 | 1.86%    | 10.11%  | -30.12%   | 18.52%   | -17.18%    |
|                | Shanghai 50     | China          | 2895          | 2628   | 2862  | 2.30%    | 6.42%   | -9.22%    | 8.90%    | -1.14%     |
|                | Hang Seng       | Hong Kong      | 27816         | 22805  | 24644 | 3.14%    | 6.34%   | -18.01%   | 8.06%    | -11.40%    |
|                | Sensex          | India          | 41258         | 29916  | 33718 | 5.82%    | 14.42%  | -27.49%   | 12.71%   | -18.28%    |
| Australia & NZ | ASX 200         | Australia      | 7133          | 4825   | 5246  | 0.06%    | 1.78%   | -32.36%   | 8.73%    | -26.45%    |
|                | NZX 50          | New Zealand    | 11835         | 9202   | 10449 | 0.28%    | 5.86%   | -22.25%   | 13.55%   | -11.71%    |
| Africa         | FTSE/JSE TOP 40 | South Africa   | 52050         | 36302  | 46188 | 1.15%    | 13.38%  | -30.26%   | 27.23%   | -11.26%    |
|                | NSE-All Share   | Nigeria        | 27756         | 22198  | 23021 | 2.45%    | 8.08%   | -20.02%   | 3.71%    | -17.06%    |

# Macro Review: US Treasuries

|                | Yields on US Treasuries |        |         |        |
|----------------|-------------------------|--------|---------|--------|
| Maturity       | 2/14/20                 | 4/3/20 | 4/17/20 | 5/1/20 |
| 3 month        | 1.58%                   | 0.10%  | 0.12%   | 0.12%  |
| 2 year         | 1.42%                   | 0.23%  | 0.20%   | 0.20%  |
| 5 year         | 1.42%                   | 0.39%  | 0.36%   | 0.36%  |
| 10 year        | 1.59%                   | 0.62%  | 0.65%   | 0.64%  |
| 20 year        | 1.89%                   | 1.05%  | 1.08%   | 1.04%  |
| 30 year        | 2.04%                   | 1.24%  | 1.27%   | 1.27%  |
|                | Yield curve slope       |        |         |        |
| 2 yr - 3 month | -0.16%                  | 0.13%  | 0.08%   | 0.08%  |
| 10 yr - 2 yr   | 0.17%                   | 0.39%  | 0.45%   | 0.44%  |
| 30 yr - 10 yr  | 0.45%                   | 0.62%  | 0.62%   | 0.63%  |

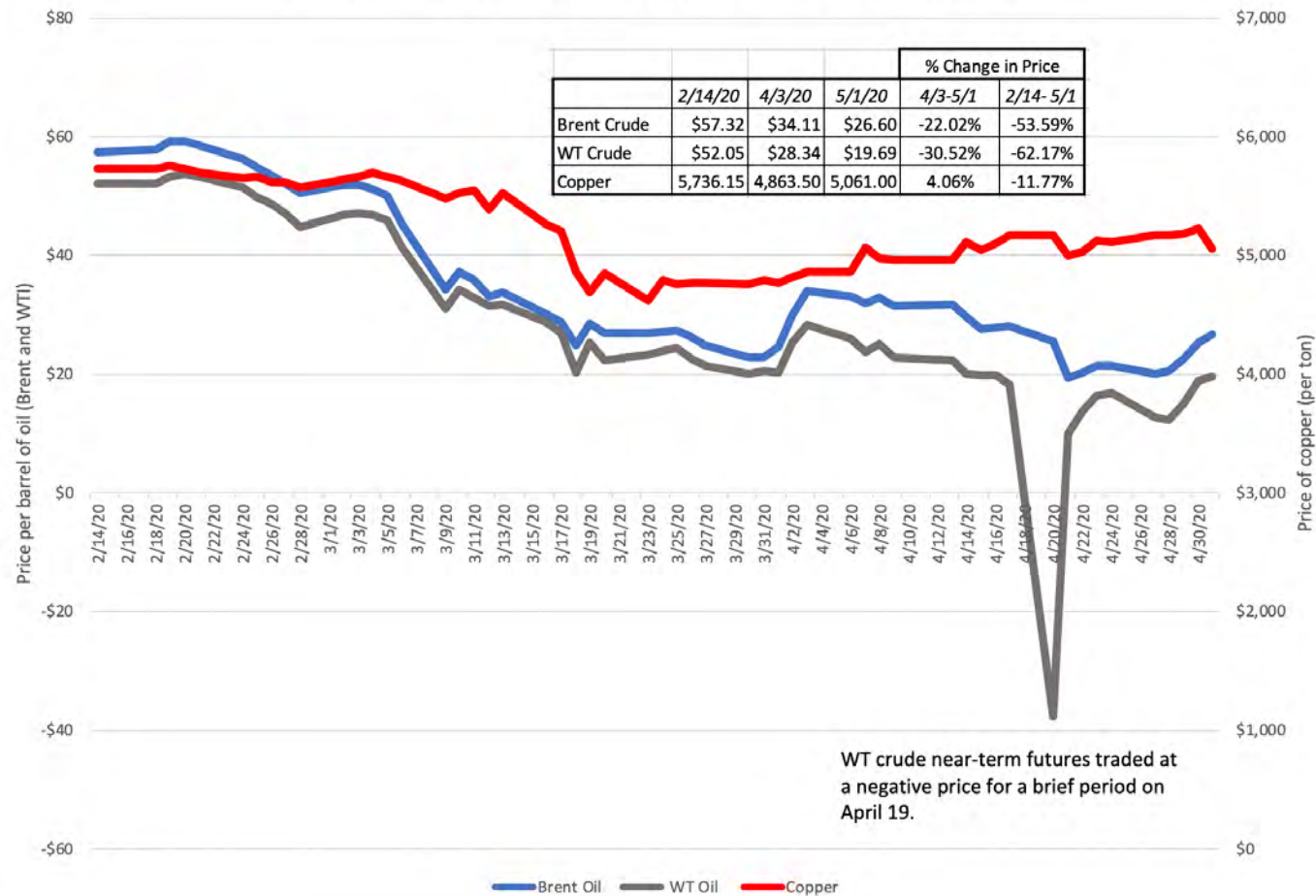


# Macro Review: Corporate Bonds

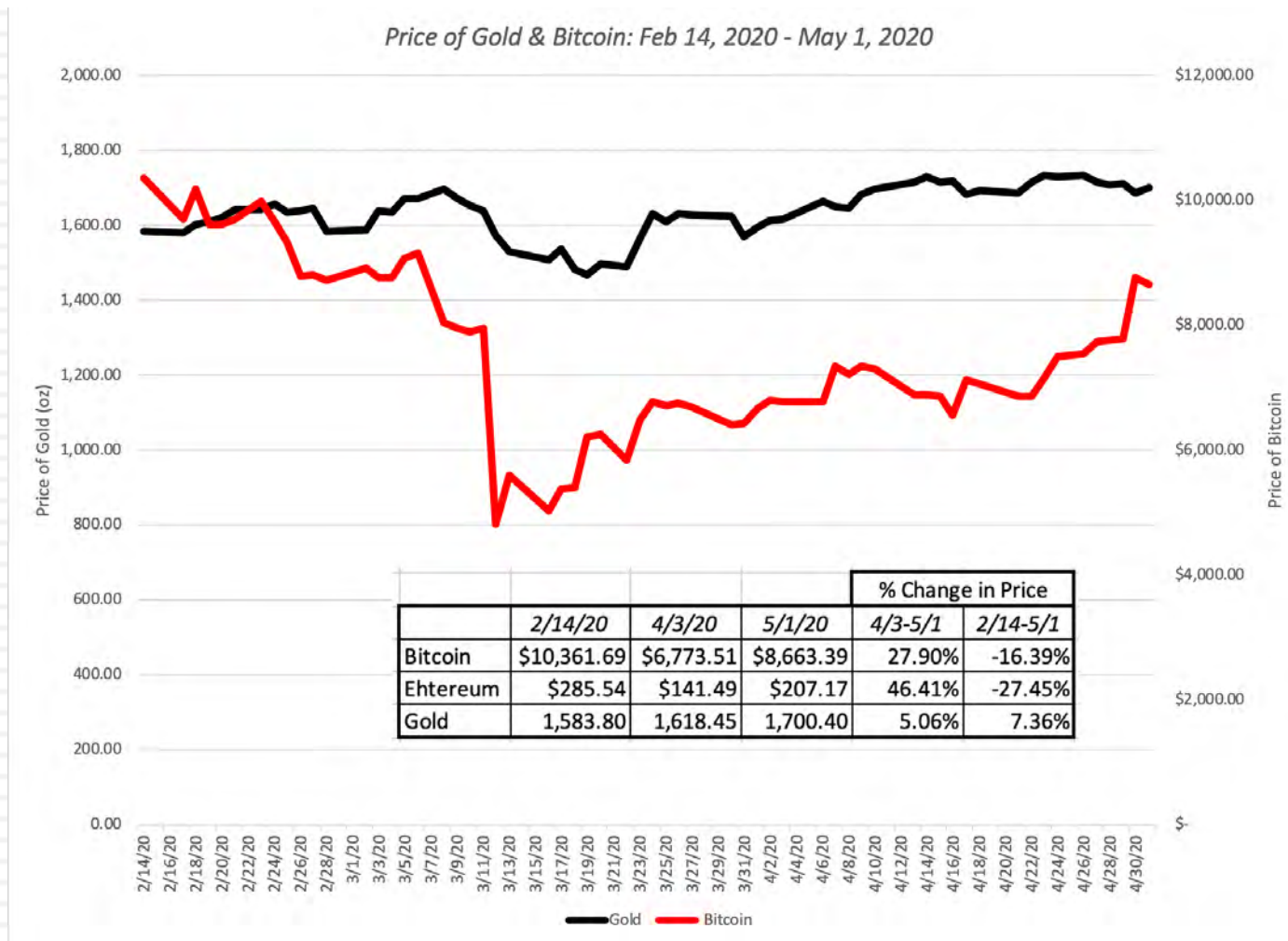
| S&P Bond Rating | Yields and Spreads on Corporates |        |         |        |                   |        |         |        | Change from 2/14 - 5/1 |        |
|-----------------|----------------------------------|--------|---------|--------|-------------------|--------|---------|--------|------------------------|--------|
|                 | Spread over 10-yr Treasury       |        |         |        | Yield on Treasury |        |         |        | Spread                 | Yield  |
|                 | 2/14/20                          | 4/3/20 | 4/17/20 | 5/1/20 | 2/14/20           | 4/3/20 | 4/17/20 | 5/1/20 |                        |        |
| AAA             | 0.69%                            | 1.50%  | 1.16%   | 1.21%  | 2.28%             | 2.12%  | 1.81%   | 1.85%  | 0.52%                  | -0.43% |
| AA              | 0.72%                            | 1.77%  | 1.29%   | 1.26%  | 2.31%             | 2.39%  | 1.94%   | 1.90%  | 0.54%                  | -0.41% |
| A               | 0.80%                            | 2.29%  | 1.70%   | 1.64%  | 2.39%             | 2.91%  | 2.35%   | 2.28%  | 0.84%                  | -0.11% |
| BBB             | 1.33%                            | 3.97%  | 3.03%   | 2.80%  | 2.92%             | 4.59%  | 3.68%   | 3.44%  | 1.47%                  | 0.52%  |
| BB              | 1.93%                            | 6.76%  | 4.81%   | 5.30%  | 3.52%             | 7.38%  | 5.46%   | 5.94%  | 3.37%                  | 2.42%  |
| B               | 3.40%                            | 10.14% | 7.93%   | 7.80%  | 4.99%             | 10.76% | 8.58%   | 8.44%  | 4.40%                  | 3.45%  |
| CCC or lower    | 9.65%                            | 18.80% | 16.32%  | 17.58% | 11.24%            | 19.42% | 16.97%  | 18.22% | 7.93%                  | 6.98%  |

# Macro Review: Oil & Copper

Commodity Prices: February 14, 2020 to May 1, 2020



# Macro Review: Gold & Bitcoin



# Global Equities: By Region

| Sub Region                | Number of firms | Market Cap    |              |               | Dollar Change   |               |                 | % Change  |          |            |
|---------------------------|-----------------|---------------|--------------|---------------|-----------------|---------------|-----------------|-----------|----------|------------|
|                           |                 | 2/14/20       | 3/20/20      | 5/1/20        | 2/14-3/20       | 3/20-5/1      | 2/14 - 5/1      | 2/14-3/20 | 3/20-5/1 | 2/14 - 5/1 |
| Africa                    | 648             | \$ 579,098    | \$ 363,274   | \$ 396,826    | \$ (215,824)    | \$ 33,552     | \$ (182,272)    | -37.27%   | 9.24%    | -31.48%    |
| Australia & NZ            | 1,356           | \$ 1,616,626  | \$ 951,839   | \$ 1,171,480  | \$ (664,787)    | \$ 219,642    | \$ (445,146)    | -41.12%   | 23.08%   | -27.54%    |
| Canada                    | 1,574           | \$ 2,240,034  | \$ 1,360,137 | \$ 1,725,687  | \$ (879,897)    | \$ 365,550    | \$ (514,347)    | -39.28%   | 26.88%   | -22.96%    |
| China                     | 6,153           | \$ 14,006,589 | \$12,410,337 | \$ 13,353,129 | \$ (1,596,253)  | \$ 942,792    | \$ (653,461)    | -11.40%   | 7.60%    | -4.67%     |
| EU & Environs             | 4,756           | \$ 13,652,192 | \$ 9,274,331 | \$ 11,009,786 | \$ (4,377,861)  | \$ 1,735,454  | \$ (2,642,406)  | -32.07%   | 18.71%   | -19.36%    |
| Eastern Europe & Russia   | 411             | \$ 815,900    | \$ 492,836   | \$ 586,922    | \$ (323,064)    | \$ 94,086     | \$ (228,978)    | -39.60%   | 19.09%   | -28.06%    |
| India                     | 1,945           | \$ 2,196,205  | \$ 1,513,432 | \$ 1,688,416  | \$ (682,774)    | \$ 174,984    | \$ (507,790)    | -31.09%   | 11.56%   | -23.12%    |
| Japan                     | 3,813           | \$ 6,038,444  | \$ 4,465,873 | \$ 5,236,432  | \$ (1,572,571)  | \$ 770,560    | \$ (802,012)    | -26.04%   | 17.25%   | -13.28%    |
| Latin America & Caribbean | 938             | \$ 2,379,522  | \$ 1,378,909 | \$ 1,508,455  | \$ (1,000,613)  | \$ 129,546    | \$ (871,067)    | -42.05%   | 9.39%    | -36.61%    |
| Middle East               | 1,148           | \$ 3,073,392  | \$ 2,557,872 | \$ 2,816,287  | \$ (515,520)    | \$ 258,415    | \$ (257,105)    | -16.77%   | 10.10%   | -8.37%     |
| Small Asia                | 7,660           | \$ 5,057,996  | \$ 3,538,866 | \$ 4,285,223  | \$ (1,519,130)  | \$ 746,357    | \$ (772,773)    | -30.03%   | 21.09%   | -15.28%    |
| UK                        | 1,094           | \$ 3,066,192  | \$ 1,923,416 | \$ 2,313,548  | \$ (1,142,776)  | \$ 390,132    | \$ (752,644)    | -37.27%   | 20.28%   | -24.55%    |
| United States             | 4,929           | \$ 35,641,758 | \$23,877,391 | \$ 29,461,339 | \$ (11,764,366) | \$ 5,583,948  | \$ (6,180,419)  | -33.01%   | 23.39%   | -17.34%    |
| Global                    | 36,425          | \$ 90,363,948 | \$64,108,512 | \$ 75,553,528 | \$ (26,255,436) | \$ 11,445,016 | \$ (14,810,420) | -29.06%   | 17.85%   | -16.39%    |

# Global Equities: By Sector

| Sub Region             | Number of firms | Market Cap    |              |               | Dollar Change   |               |                 | % Change  |          |            |
|------------------------|-----------------|---------------|--------------|---------------|-----------------|---------------|-----------------|-----------|----------|------------|
|                        |                 | 2/14/20       | 3/20/20      | 5/1/20        | 2/14-3/20       | 3/20-5/1      | 2/14 - 5/1      | 2/14-3/20 | 3/20-5/1 | 2/14 - 5/1 |
| Communication Services | 1,690           | \$ 7,342,037  | \$ 5,488,763 | \$ 6,489,211  | \$ (1,853,275)  | \$ 1,000,448  | \$ (852,827)    | -25.24%   | 18.23%   | -11.62%    |
| Consumer Discretionary | 4,930           | \$ 10,148,621 | \$ 7,059,451 | \$ 8,539,340  | \$ (3,089,170)  | \$ 1,479,890  | \$ (1,609,280)  | -30.44%   | 20.96%   | -15.86%    |
| Consumer Staples       | 2,300           | \$ 7,116,299  | \$ 5,701,278 | \$ 6,476,403  | \$ (1,415,022)  | \$ 775,126    | \$ (639,896)    | -19.88%   | 13.60%   | -8.99%     |
| Energy                 | 1,313           | \$ 5,930,247  | \$ 3,852,615 | \$ 4,586,674  | \$ (2,077,632)  | \$ 734,059    | \$ (1,343,573)  | -35.03%   | 19.05%   | -22.66%    |
| Financials             | 3,853           | \$ 14,919,880 | \$ 9,915,070 | \$ 11,045,925 | \$ (5,004,810)  | \$ 1,130,855  | \$ (3,873,955)  | -33.54%   | 11.41%   | -25.97%    |
| Health Care            | 3,408           | \$ 8,970,146  | \$ 6,909,417 | \$ 8,529,498  | \$ (2,060,729)  | \$ 1,620,081  | \$ (440,649)    | -22.97%   | 23.45%   | -4.91%     |
| Industrials            | 6,546           | \$ 10,112,845 | \$ 6,894,349 | \$ 8,021,543  | \$ (3,218,496)  | \$ 1,127,194  | \$ (2,091,302)  | -31.83%   | 16.35%   | -20.68%    |
| Information Technology | 4,867           | \$ 13,594,754 | \$ 9,734,631 | \$ 11,846,660 | \$ (3,860,123)  | \$ 2,112,029  | \$ (1,748,093)  | -28.39%   | 21.70%   | -12.86%    |
| Materials              | 4,400           | \$ 4,988,086  | \$ 3,526,263 | \$ 4,233,418  | \$ (1,461,823)  | \$ 707,155    | \$ (754,669)    | -29.31%   | 20.05%   | -15.13%    |
| Real Estate            | 2,298           | \$ 4,040,386  | \$ 2,699,214 | \$ 3,143,627  | \$ (1,341,172)  | \$ 444,413    | \$ (896,758)    | -33.19%   | 16.46%   | -22.19%    |
| Utilities              | 814             | \$ 3,199,760  | \$ 2,326,774 | \$ 2,640,444  | \$ (872,986)    | \$ 313,670    | \$ (559,316)    | -27.28%   | 13.48%   | -17.48%    |
| Global                 | 36,425          | \$ 90,363,948 | \$64,108,512 | \$ 75,553,528 | \$ (26,255,436) | \$ 11,445,016 | \$ (14,810,420) | -29.06%   | 17.85%   | -16.39%    |

# Global Equities: Industry Winners & Losers

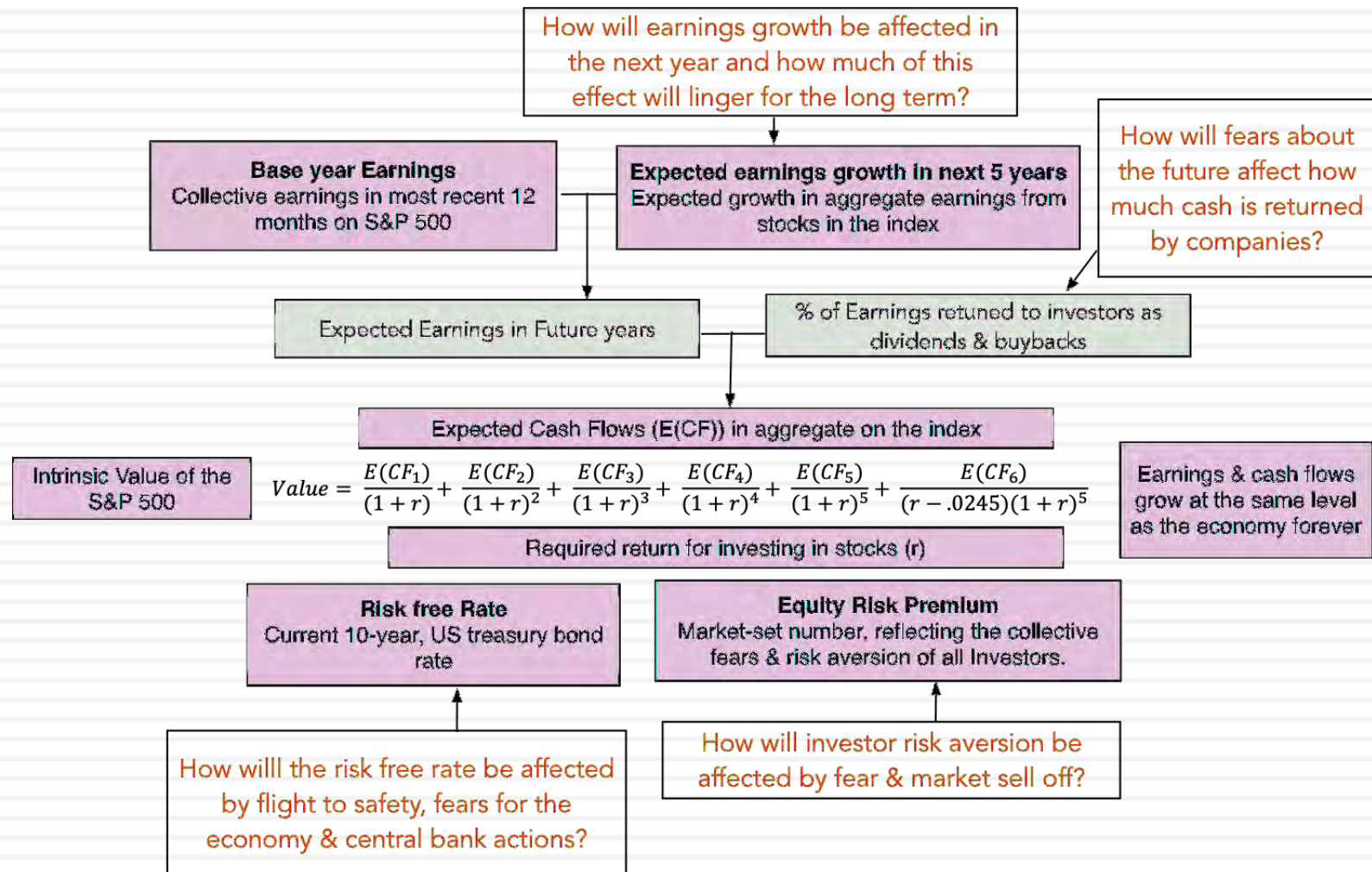
|                                       |                 | Worst Performing Industries |              |              |               |            |              |           |          |            |
|---------------------------------------|-----------------|-----------------------------|--------------|--------------|---------------|------------|--------------|-----------|----------|------------|
|                                       |                 | Market Cap                  |              |              | Dollar Change |            |              | % Change  |          |            |
| Industry                              | Number of firms | 2/14/20                     | 3/20/20      | 5/1/20       | 2/14-3/20     | 3/20-5/1   | 2/14 - 5/1   | 2/14-3/20 | 3/20-5/1 | 2/14 - 5/1 |
| Air Transport                         | 150             | \$ 556,178                  | \$ 313,482   | \$ 351,688   | \$ (242,697)  | \$ 38,207  | \$ (204,490) | -43.64%   | 12.19%   | -36.77%    |
| Oil/Gas (Production and Exploration)  | 480             | \$ 692,963                  | \$ 318,155   | \$ 444,392   | \$ (374,807)  | \$ 126,237 | \$ (248,571) | -54.09%   | 39.68%   | -35.87%    |
| Aerospace/Defense                     | 212             | \$ 1,217,844                | \$ 674,146   | \$ 799,015   | \$ (543,697)  | \$ 124,868 | \$ (418,829) | -44.64%   | 18.52%   | -34.39%    |
| Broadcasting                          | 121             | \$ 164,681                  | \$ 93,967    | \$ 108,625   | \$ (70,714)   | \$ 14,658  | \$ (56,056)  | -42.94%   | 15.60%   | -34.04%    |
| Hotel/Gaming                          | 505             | \$ 715,671                  | \$ 386,318   | \$ 483,034   | \$ (329,354)  | \$ 96,716  | \$ (232,638) | -46.02%   | 25.04%   | -32.51%    |
| Homebuilding                          | 147             | \$ 247,004                  | \$ 127,536   | \$ 166,749   | \$ (119,469)  | \$ 39,214  | \$ (80,255)  | -48.37%   | 30.75%   | -32.49%    |
| Reinsurance                           | 33              | \$ 180,567                  | \$ 98,174    | \$ 122,043   | \$ (82,393)   | \$ 23,869  | \$ (58,524)  | -45.63%   | 24.31%   | -32.41%    |
| Food Wholesalers                      | 118             | \$ 93,191                   | \$ 50,097    | \$ 64,748    | \$ (43,094)   | \$ 14,651  | \$ (28,443)  | -46.24%   | 29.24%   | -30.52%    |
| Oil/Gas Distribution                  | 186             | \$ 649,295                  | \$ 357,879   | \$ 455,453   | \$ (291,416)  | \$ 97,574  | \$ (193,842) | -44.88%   | 27.26%   | -29.85%    |
|                                       |                 | Best Performing Industries  |              |              |               |            |              |           |          |            |
|                                       |                 | Market Cap                  |              |              | Dollar Change |            |              | % Change  |          |            |
| Industry                              | Number of firms | 2/14/20                     | 3/20/20      | 5/1/20       | 2/14-3/20     | 3/20-5/1   | 2/14 - 5/1   | 2/14-3/20 | 3/20-5/1 | 2/14 - 5/1 |
| Precious Metals                       | 518             | \$ 418,987                  | \$ 297,954   | \$ 448,303   | \$ (121,034)  | \$ 150,350 | \$ 29,316    | -28.89%   | 50.46%   | 7.00%      |
| Healthcare Information and Technology | 318             | \$ 772,658                  | \$ 607,128   | \$ 772,518   | \$ (165,530)  | \$ 165,390 | \$ (140)     | -21.42%   | 27.24%   | -0.02%     |
| Drugs (Biotechnology)                 | 912             | \$ 1,408,988                | \$ 1,134,635 | \$ 1,401,350 | \$ (274,352)  | \$ 266,714 | \$ (7,638)   | -19.47%   | 23.51%   | -0.54%     |
| Software (Internet)                   | 108             | \$ 226,938                  | \$ 166,704   | \$ 224,947   | \$ (60,234)   | \$ 58,243  | \$ (1,991)   | -26.54%   | 34.94%   | -0.88%     |
| Retail (Online)                       | 251             | \$ 2,455,864                | \$ 1,989,522 | \$ 2,418,166 | \$ (466,342)  | \$ 428,644 | \$ (37,697)  | -18.99%   | 21.55%   | -1.53%     |
| Drugs (Pharmaceutical)                | 1,050           | \$ 3,626,610                | \$ 2,891,126 | \$ 3,493,441 | \$ (735,483)  | \$ 602,315 | \$ (133,169) | -20.28%   | 20.83%   | -3.67%     |
| Food Processing                       | 1,019           | \$ 1,786,740                | \$ 1,497,757 | \$ 1,703,795 | \$ (288,983)  | \$ 206,038 | \$ (82,945)  | -16.17%   | 13.76%   | -4.64%     |
| Household Products                    | 410             | \$ 1,453,701                | \$ 1,186,736 | \$ 1,351,159 | \$ (266,966)  | \$ 164,424 | \$ (102,542) | -18.36%   | 13.86%   | -7.05%     |
| Healthcare Products                   | 633             | \$ 1,830,537                | \$ 1,350,855 | \$ 1,699,442 | \$ (479,682)  | \$ 348,587 | \$ (131,095) | -26.20%   | 25.80%   | -7.16%     |
| Retail (Grocery and Food)             | 151             | \$ 479,616                  | \$ 397,678   | \$ 444,071   | \$ (81,938)   | \$ 46,393  | \$ (35,546)  | -17.08%   | 11.67%   | -7.41%     |



# Back to Basics

Value Drivers

# A Framework for assessing value effects: Index

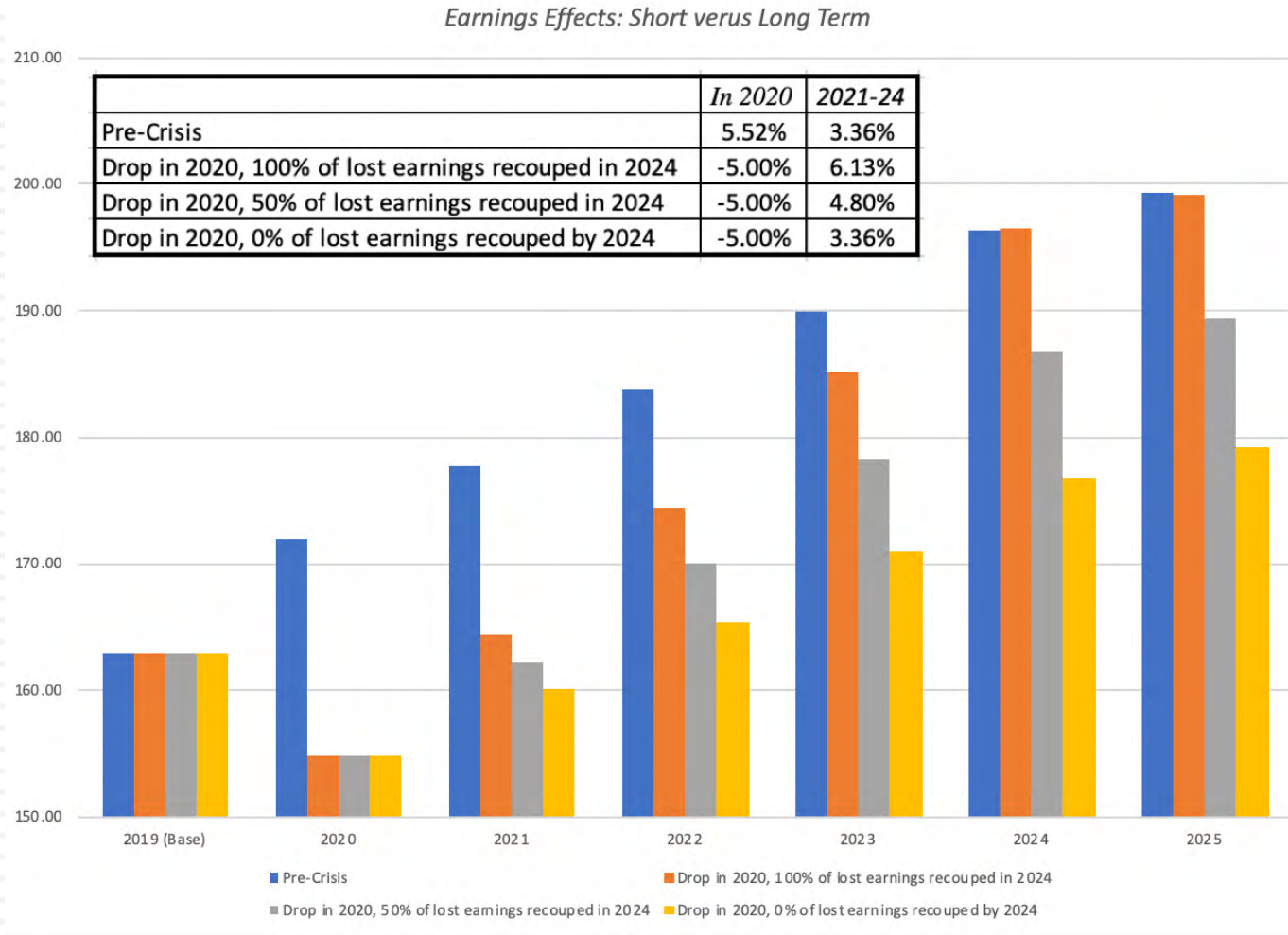




# 1. Earnings Growth

- Earnings Growth: Even at this early stage in this crisis, it is clear that the virus is having an effect on corporate operations. With some companies like hotels and airlines, the effect that the virus has had on global travel has clearly had an effect on revenues and operations. With others, it is concerns about supply chains. The follow up question then becomes one of specifics:
  - ▣ Drop in 2020 Earnings: This is the number that will reflect how you see Corona Virus affect the collective earnings on stocks in 2020. This will include not only earnings declines caused by lower revenues growth at companies like United Airlines, but also the earnings decline caused by higher costs faced by companies due to virus related problems (supply chain breakdowns). The wider the swathe of companies
  - ▣ Drop in long term Earnings: In previous crises, where consumers and workers stayed home, either for health reasons or because of fear, the business that was lost as a result of the peril was made up for, when it passed. It is important that we ask this question, because this effect will dominate, when it comes to trying to explain value.

# Earnings Growth Effects



## 2. Cash Return

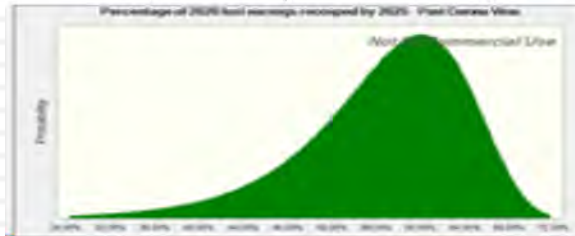
- In 2019, the companies in the S&P 500 returned 92.33% of their earnings to investors in dividends and buybacks, a reflection not only of how much their cash flows were that year but also how confident they were in their capacity to generate cash flows in the future.
  - ▣ That high number reflects not only the cash that many US companies had on hand, but a confidence that they could maintain earnings and continue to pay out cash flows.
- To the extent that this confidence is shaken by the virus, you may see a pull back in this number to perhaps something closer to the 85.24% that is the average for the last decade.

# 3. Equity Risk Premiums

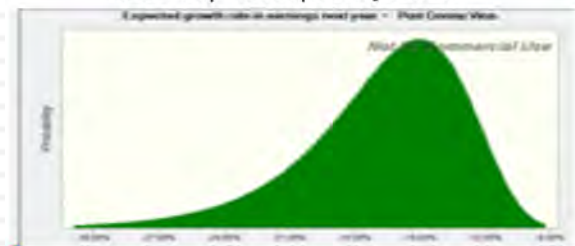
- The required return on stocks will be impacted, with one of the effects being explicit and visible in markets, in the form of the US treasury bond rate and the other being implicit, taking the form of an equity risk premium.
- If investors become more risk averse, they will demand a higher ERP, though as the fear factor fades, this number will fall back as well, but perhaps not to what it was prior to the crisis.
- The fact that the equity risk premium is already at the higher end of the historical norms, at about 5.50% on February 25, 2020, does indicate limits, but there could be a short-term jump in the number, at least until there is less uncertainty.

# What now? Valuing the Index on March 13, 2020

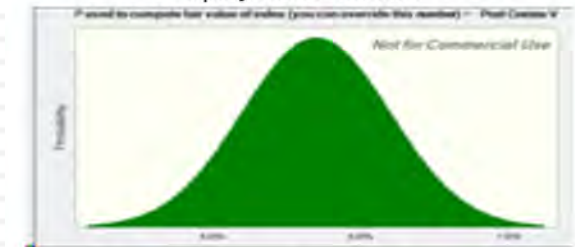
Expected drop in 2020 Earnings



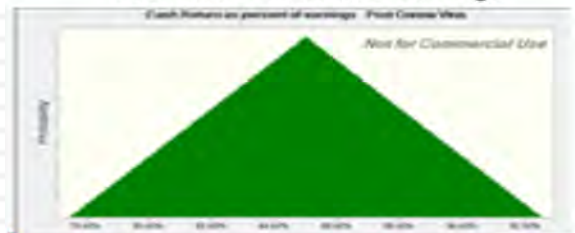
% of drop recouped by 2025



Equity Risk Premium

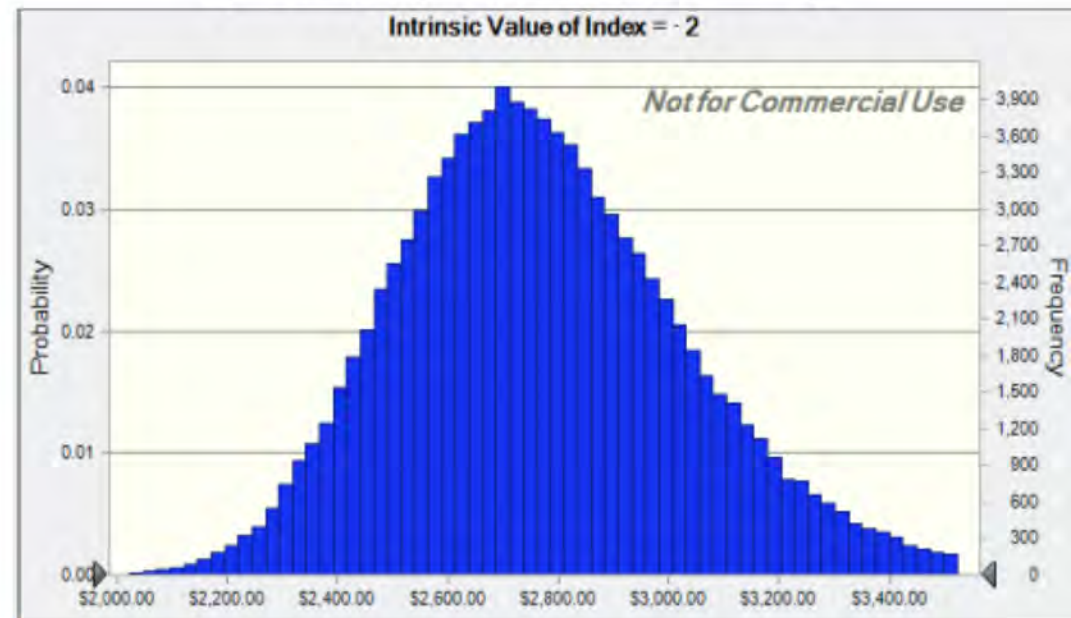


Cash Returned as % of Earnings



Valuing the S&P 500 Index: March 13, 2020

| Percentile | S&P 500 Index |
|------------|---------------|
| 0%         | \$1,903.33    |
| 10%        | \$2,450.16    |
| 20%        | \$2,547.91    |
| 30%        | \$2,621.98    |
| 40%        | \$2,688.01    |
| 50%        | \$2,750.84    |
| 60%        | \$2,817.83    |
| 70%        | \$2,893.02    |
| 80%        | \$2,986.04    |
| 90%        | \$3,123.78    |
| 100%       | \$4,452.38    |

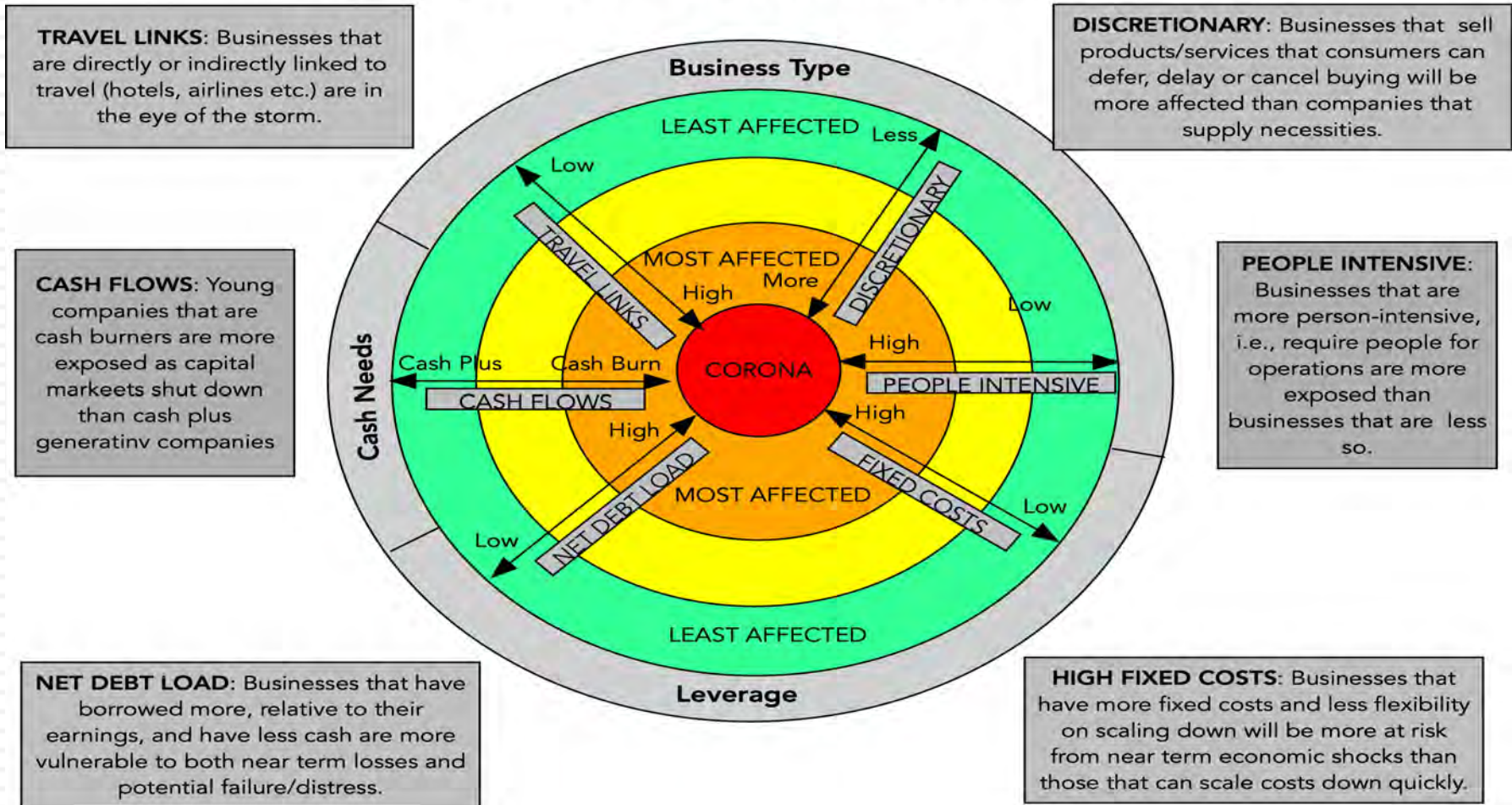


# With individual stocks, there is uncertainty...

- Historical data may be recent, but it is already dated: The most recent financial statements are only a few weeks ago but the revenues and earnings numbers reported in those recent financial statements seem almost useless, a reflection of a different economic setting. The same can be said about equity risk premiums and default spreads.
- This year will deliver bad news: There is almost no doubt that 2020 will be a bad year for all companies, with the key questions being how much of a drop in revenues companies will see this year and how this will translate into earnings shocks.
- Survival has become a central question: The magnitude of the shock to corporate bottom lines and the speed with which it has happened will put companies at risk, leaving debt-burdened and young companies exposed to default and distress.
- The post-virus economy will be different from the pre-crisis version: Every major crisis creates changes in business environment, regulations and business models that reshapes the economy and resets competitive games, setting the stage for new winners and losers.

# The Virus Effect: A Picture

**CIRCLES OF INFECTION: CORONA'S EFFECT ON BUSINESSES**

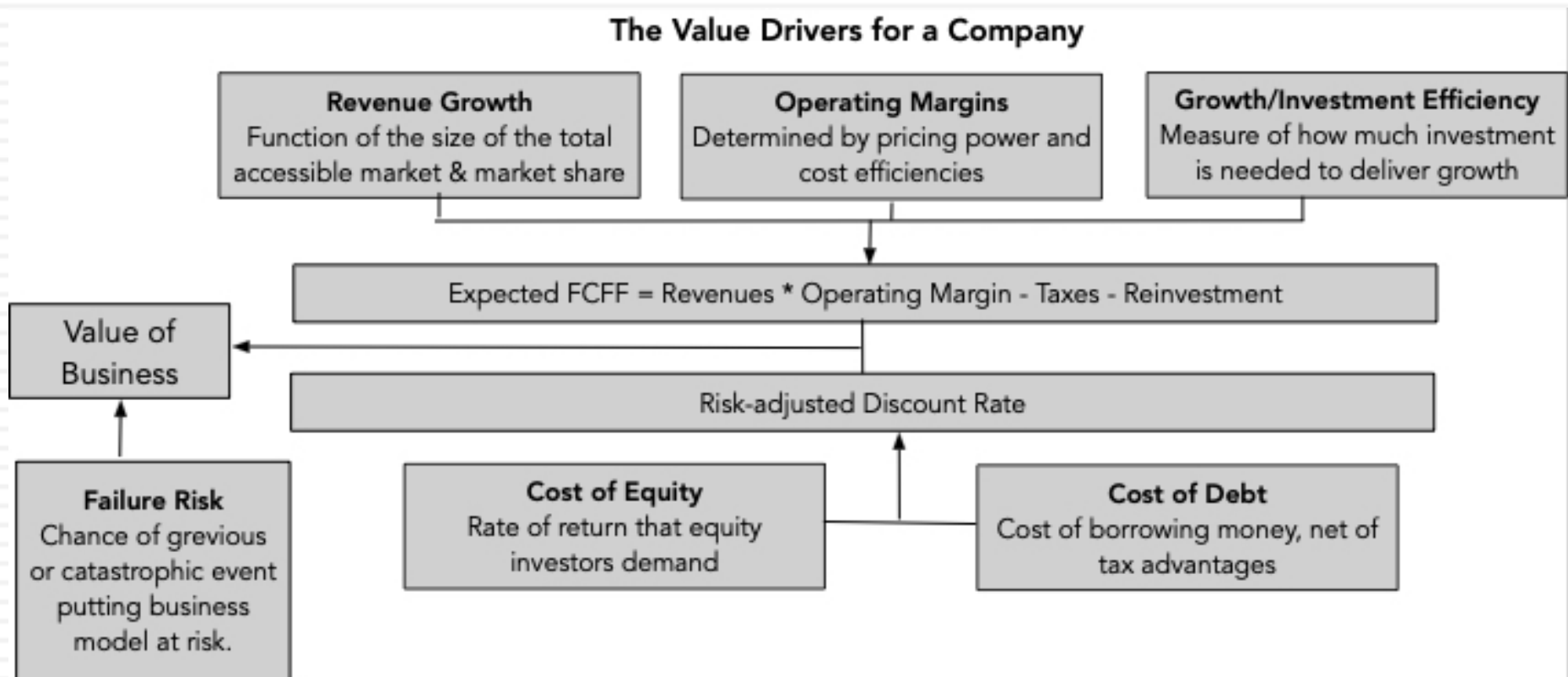


# And the dark side beckons...

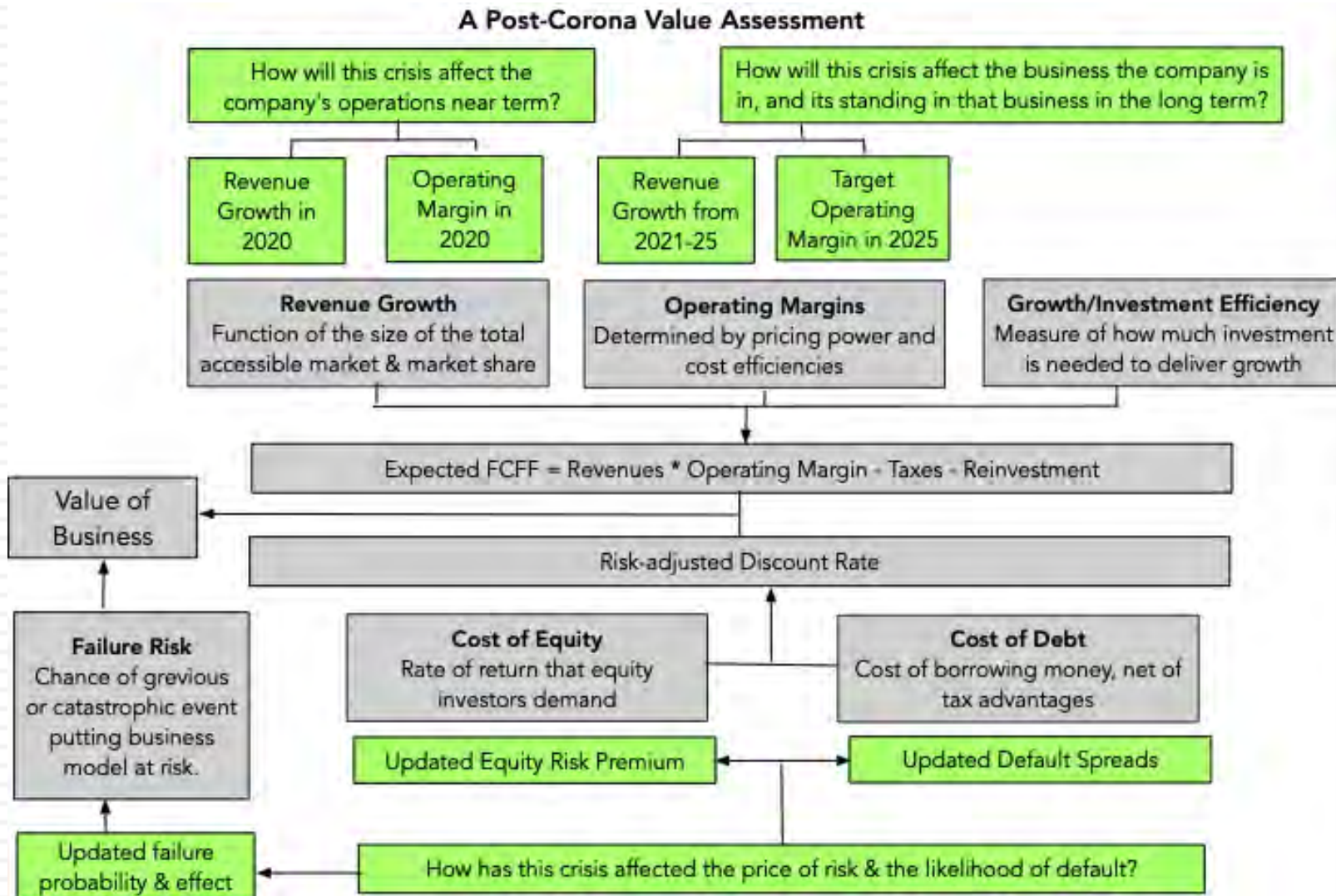
- if your concept of valuation is downloading last year's financials for a company into a spread sheet and then using historical growth rates, with some mean reversion thrown in, to forecast future numbers, you are probably feeling lost right now, and with good reason.
- It is also not a time to wring our hands, complain that there is too much uncertainty and argue that the fundamentals don't matter.
  - ▣ If you do so, you will be drawn to the dark side of investing, where fundamentals don't matter (paradigm shifts, anyone?), new pricing metrics get invented and you are at the mercy of mood and momentum.
- Ironically, it is precisely at times like these that you need to go back to basics.



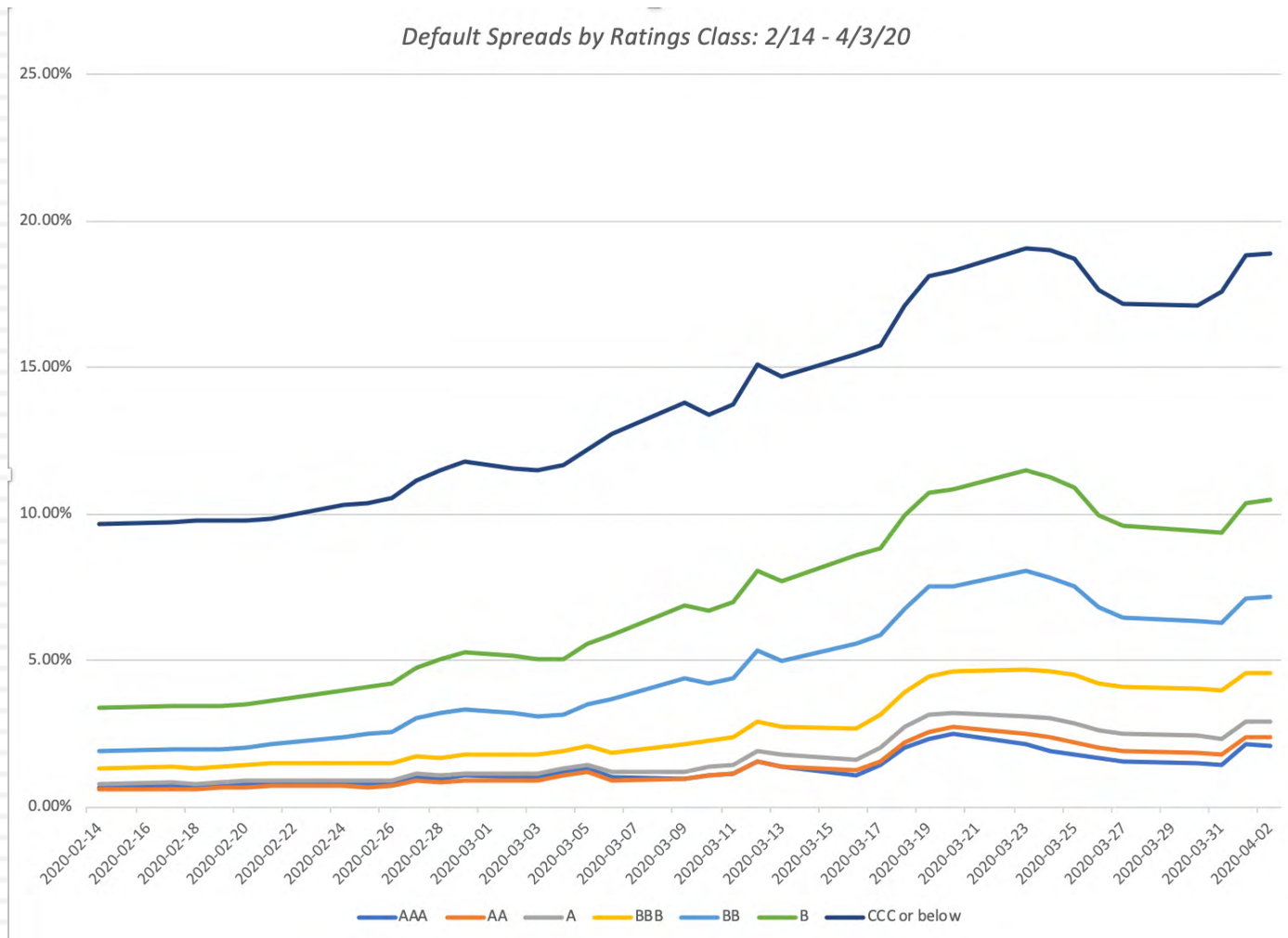
# The Basics of Value



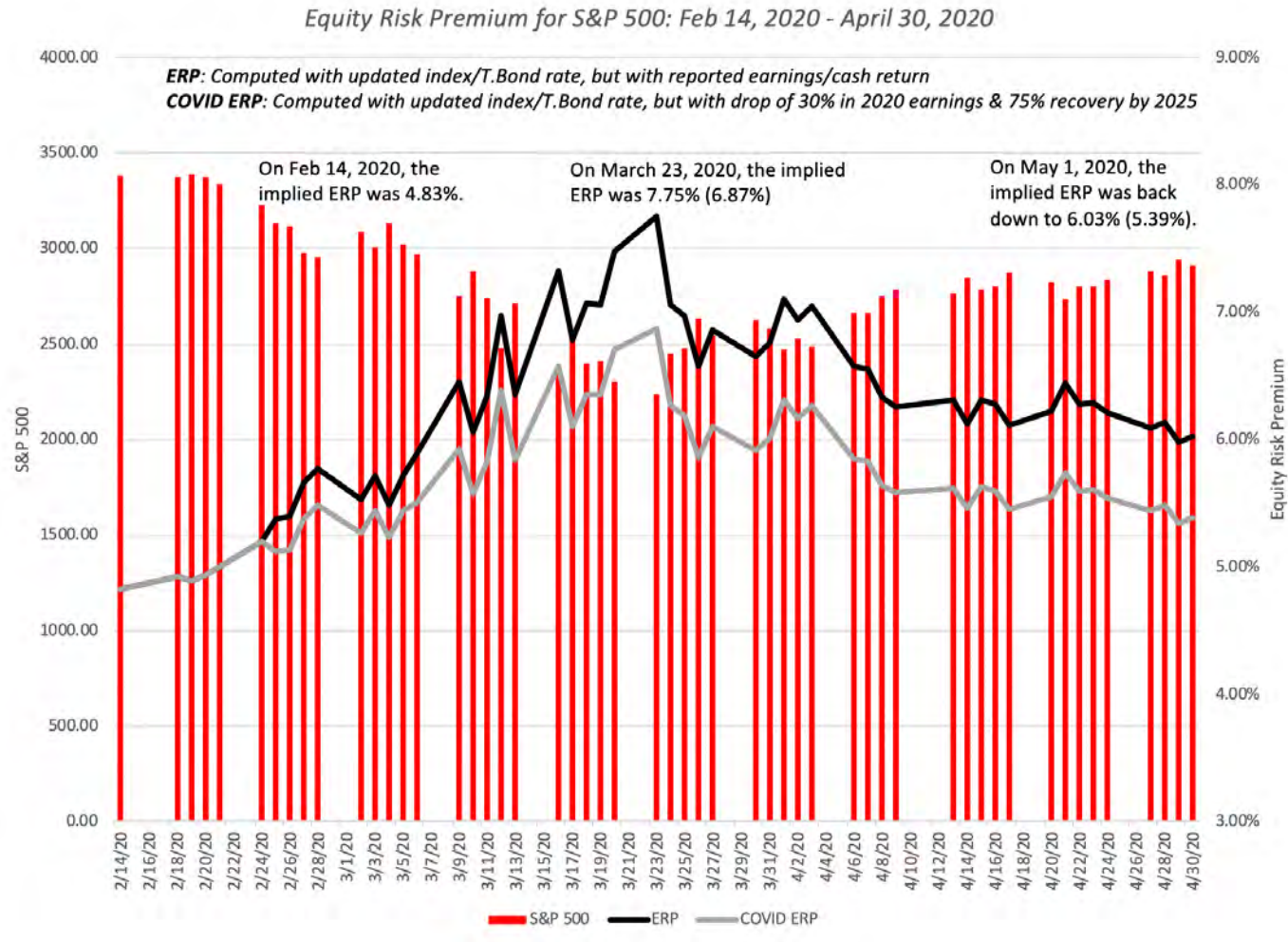
# A Post-Corona Version



# Bond Market Default Spreads: The COVID crisis

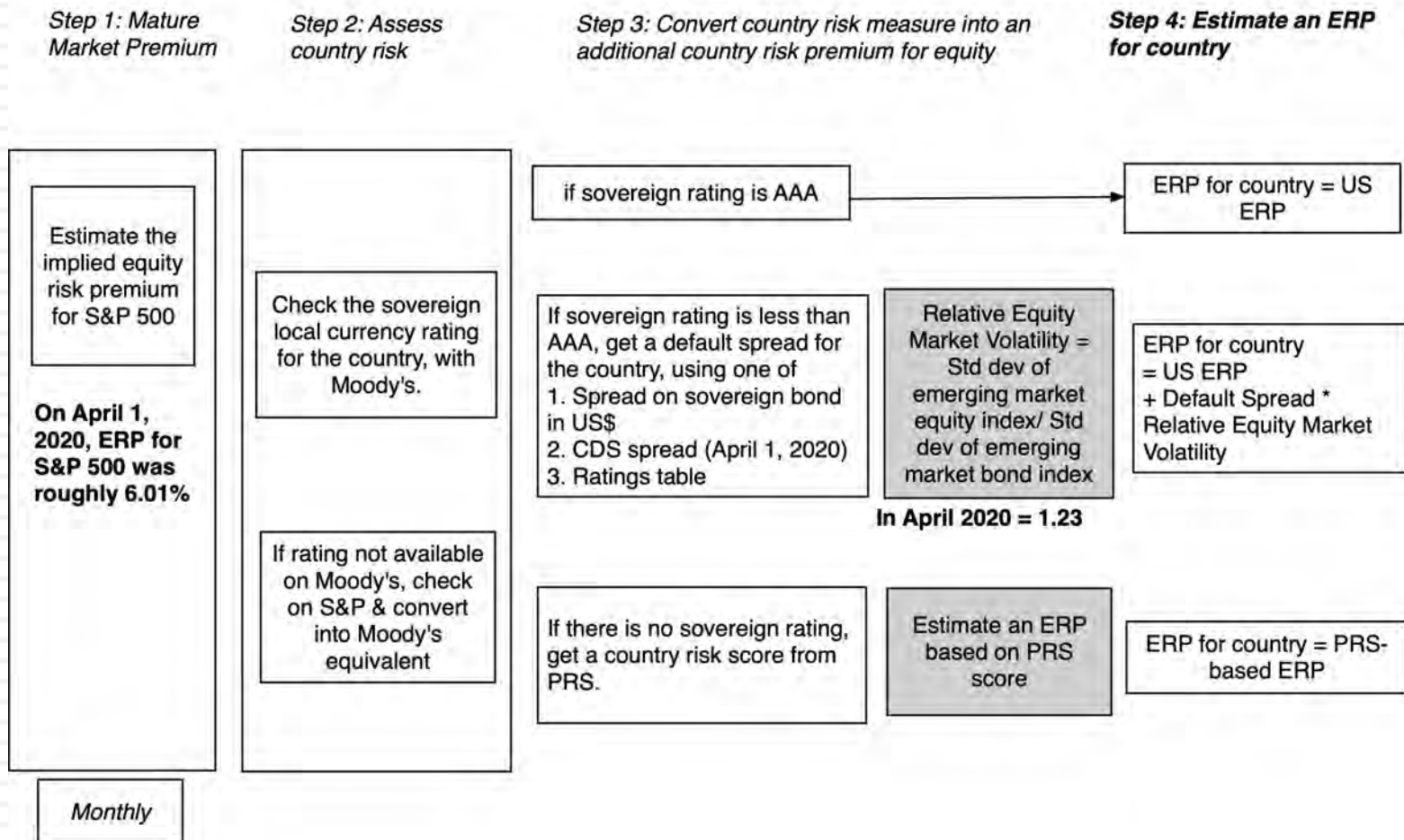


# ERP: The COVID crisis



# Country Risk Premiums: Resetting the base numbers

## ERP Estimation Procedure - April 1, 2020



ERP : April 1, 2020

|                      |        |       |                       |              |              |
|----------------------|--------|-------|-----------------------|--------------|--------------|
| Andorra              | 9.49%  | 7.08% | Italy                 | 10.04%       | 7.37%        |
| Austria              | 6.74%  | 5.59% | Jersey (States of)    | 7.30%        | 5.89%        |
| Belgium              | 7.12%  | 5.80% | Liechtenstein         | 6.01%        | 5.20%        |
| Cyprus               | 11.51% | 8.16% | Luxembourg            | 6.01%        | 5.20%        |
| Denmark              | 6.01%  | 5.20% | Malta                 | 7.56%        | 6.04%        |
| Finland              | 6.74%  | 5.59% | Netherlands           | 6.01%        | 5.20%        |
| France               | 6.92%  | 5.69% | Norway                | 6.01%        | 5.20%        |
| Germany              | 6.01%  | 5.20% | Portugal              | 10.04%       | 7.37%        |
| Greece               | 14.25% | 9.64% | Spain                 | 8.93%        | 6.77%        |
| Guernsey (States of) | 8.93%  | 6.77% | Sweden                | 6.01%        | 5.20%        |
| Iceland              | 7.56%  | 6.04% | Switzerland           | 6.01%        | 5.20%        |
| Ireland              | 7.56%  | 6.04% | Turkey                | 14.25%       | 9.64%        |
| Isle of Man          | 6.92%  | 5.69% | United Kingdom        | 6.92%        | 5.69%        |
|                      |        |       | <b>Western Europe</b> | <b>7.51%</b> | <b>6.01%</b> |

|                      |              |              |
|----------------------|--------------|--------------|
| Canada               | 6.01%        | 5.20%        |
| United States        | 6.01%        | 5.20%        |
| <b>North America</b> | <b>6.01%</b> | <b>5.20%</b> |

|                      |               |              |
|----------------------|---------------|--------------|
| Argentina            | 24.52%        | 14.08%       |
| Belize               | 17.91%        | 11.62%       |
| Bolivia              | 14.25%        | 8.75%        |
| Brazil               | 11.51%        | 8.16%        |
| Chile                | 7.30%         | 5.89%        |
| Colombia             | 9.49%         | 7.08%        |
| Costa Rica           | 16.08%        | 9.64%        |
| Ecuador              | 24.30%        | 11.62%       |
| El Salvador          | 17.91%        | 11.62%       |
| Guatemala            | 10.58%        | 7.66%        |
| Honduras             | 14.25%        | 9.64%        |
| Mexico               | 8.21%         | 6.38%        |
| Nicaragua            | 17.91%        | 10.63%       |
| Panama               | 8.93%         | 6.77%        |
| Paraguay             | 10.58%        | 7.66%        |
| Peru                 | 8.21%         | 6.38%        |
| Suriname             | 16.08%        | 10.63%       |
| Uruguay              | 14.25%        | 9.64%        |
| Venezuela            | 24.52%        | 22.89%       |
| <b>Latin America</b> | <b>11.79%</b> | <b>8.48%</b> |

|                     |               |              |
|---------------------|---------------|--------------|
| Angola              | 17.91%        | 11.62%       |
| Benin               | 16.08%        | 10.63%       |
| Botswana            | 7.56%         | 6.04%        |
| Burkina Faso        | 16.08%        | 10.63%       |
| Cameroon            | 16.08%        | 10.63%       |
| Cape Verde          | 16.08%        | 10.63%       |
| Congo (DR)          | 19.73%        | 12.59%       |
| Congo (Republic of) | 22.49%        | 14.08%       |
| Côte d'Ivoire       | 12.60%        | 8.75%        |
| Egypt               | 16.08%        | 10.63%       |
| Ethiopia            | 14.25%        | 9.64%        |
| Gabon               | 19.73%        | 12.59%       |
| Ghana               | 17.91%        | 11.62%       |
| Kenya               | 16.08%        | 10.63%       |
| Mali                | 17.91%        | 11.62%       |
| Morocco             | 10.58%        | 7.66%        |
| Mozambique          | 22.49%        | 14.08%       |
| Namibia             | 11.51%        | 8.16%        |
| Niger               | 17.91%        | 11.62%       |
| Nigeria             | 16.08%        | 10.63%       |
| Rwanda              | 16.08%        | 10.63%       |
| Senegal             | 12.60%        | 8.75%        |
| South Africa        | 10.58%        | 7.37%        |
| Swaziland           | 16.08%        | 10.63%       |
| Tanzania            | 14.25%        | 9.64%        |
| Togo                | 17.91%        | 11.62%       |
| Tunisia             | 16.08%        | 10.63%       |
| Uganda              | 16.08%        | 10.63%       |
| Zambia              | 24.52%        | 14.08%       |
| <b>Africa</b>       | <b>14.71%</b> | <b>9.89%</b> |

|                               |              |              |
|-------------------------------|--------------|--------------|
| Albania                       | 14.25%       | 9.64%        |
| Armenia                       | 12.60%       | 8.75%        |
| Azerbaijan                    | 11.51%       | 8.16%        |
| Belarus                       | 17.91%       | 11.62%       |
| Bosnia and Herzego            | 17.91%       | 11.62%       |
| Bulgaria                      | 9.49%        | 7.08%        |
| Croatia                       | 11.51%       | 8.16%        |
| Czech Republic                | 7.12%        | 5.80%        |
| Estonia                       | 7.30%        | 5.89%        |
| Georgia                       | 11.51%       | 8.16%        |
| Hungary                       | 10.04%       | 7.37%        |
| Kazakhstan                    | 10.04%       | 7.37%        |
| Kyrgyzstan                    | 16.08%       | 10.63%       |
| Latvia                        | 8.21%        | 6.38%        |
| Lithuania                     | 8.21%        | 6.38%        |
| Macedonia                     | 12.60%       | 8.75%        |
| Moldova                       | 17.91%       | 11.62%       |
| Montenegro                    | 14.25%       | 9.64%        |
| Poland                        | 7.56%        | 6.04%        |
| Romania                       | 10.04%       | 7.37%        |
| Russia                        | 10.04%       | 7.37%        |
| Serbia                        | 12.60%       | 8.75%        |
| Slovakia                      | 7.56%        | 6.04%        |
| Slovenia                      | 8.93%        | 6.77%        |
| Tajikistan                    | 17.91%       | 11.62%       |
| Ukraine                       | 19.73%       | 12.59%       |
| Uzbekistan                    | 9.49%        | 7.08%        |
| <b>E. Europe &amp; Russia</b> | <b>9.98%</b> | <b>7.34%</b> |

|                          |              |              |
|--------------------------|--------------|--------------|
| Abu Dhabi                | 6.92%        | 5.69%        |
| Bahrain                  | 16.08%       | 10.63%       |
| Iraq                     | 19.73%       | 12.59%       |
| Israel                   | 7.30%        | 5.89%        |
| Jordan                   | 14.25%       | 9.64%        |
| Kuwait                   | 6.92%        | 5.69%        |
| Lebanon                  | 24.52%       | 14.08%       |
| Oman                     | 11.51%       | 7.66%        |
| Qatar                    | 7.12%        | 5.80%        |
| Ras Al Khaimah (Emirate) | 19.73%       | 12.59%       |
| Saudi Arabia             | 7.30%        | 5.89%        |
| Sharjah                  | 9.49%        | 6.38%        |
| United Arab Emirates     | 6.92%        | 5.69%        |
| <b>Middle East</b>       | <b>8.93%</b> | <b>6.77%</b> |

| Country         | PRS Risk Score | ERP (4/1/20) | ERP (1/1/20) |
|-----------------|----------------|--------------|--------------|
| Algeria         | 63             | 17.91%       | 11.62%       |
| Brunei          | 82.75          | 6.74%        | 5.59%        |
| Gambia          | 63.75          | 17.91%       | 11.62%       |
| Guinea          | 57             | 24.30%       | 15.06%       |
| Guinea-Bissau   | 63.25          | 17.91%       | 11.62%       |
| Guyana          | 63.75          | 17.91%       | 11.62%       |
| Haiti           | 57.5           | 22.49%       | 14.08%       |
| Iran            | 62.5           | 17.91%       | 11.62%       |
| Korea, D.P.R.   | 50.5           | 27.03%       | 17.03%       |
| Liberia         | 49.5           | 31.93%       | 21.71%       |
| Libya           | 69.5           | 11.51%       | 8.16%        |
| Madagascar      | 65.5           | 16.08%       | 10.63%       |
| Malawi          | 63.5           | 17.91%       | 11.62%       |
| Myanmar         | 64             | 17.91%       | 11.62%       |
| Sierra Leone    | 57             | 24.30%       | 15.06%       |
| Somalia         | 53             | 27.03%       | 17.03%       |
| Sudan           | 39.75          | 31.93%       | 21.71%       |
| Syria           | 53             | 27.03%       | 17.03%       |
| Yemen, Republic | 54.5           | 27.03%       | 17.03%       |
| Zimbabwe        | 50.5           | 27.03%       | 17.03%       |

|                  |              |              |
|------------------|--------------|--------------|
| Bangladesh       | 12.60%       | 8.75%        |
| Cambodia         | 16.08%       | 10.63%       |
| China            | 7.30%        | 5.89%        |
| Fiji             | 12.60%       | 8.75%        |
| Hong Kong        | 7.12%        | 5.69%        |
| India            | 9.49%        | 7.08%        |
| Indonesia        | 9.49%        | 7.08%        |
| Japan            | 7.30%        | 5.89%        |
| Korea            | 6.92%        | 5.69%        |
| Laos             | 8.21%        | NA           |
| Macao            | 7.12%        | 5.80%        |
| Malaysia         | 8.21%        | 6.38%        |
| Maldives         | 16.08%       | 10.63%       |
| Mauritius        | 8.93%        | 6.77%        |
| Mongolia         | 17.91%       | 11.62%       |
| Pakistan         | 17.91%       | 11.62%       |
| Papua New Guinea | 16.08%       | 10.63%       |
| Philippines      | 9.49%        | 7.08%        |
| Singapore        | 6.01%        | 5.20%        |
| Solomon Islands  | 17.91%       | 11.62%       |
| Sri Lanka        | 16.08%       | 10.63%       |
| Taiwan           | 7.12%        | 5.80%        |
| Thailand         | 8.93%        | 6.77%        |
| Vietnam          | 12.60%       | 8.75%        |
| <b>Asia</b>      | <b>7.89%</b> | <b>6.21%</b> |

|                           |              |              |
|---------------------------|--------------|--------------|
| Australia                 | 6.01%        | 5.20%        |
| Cook Islands              | 14.25%       | 9.64%        |
| New Zealand               | 6.01%        | 5.20%        |
| <b>Australia &amp; NZ</b> | <b>6.02%</b> | <b>5.20%</b> |

## Boeing

### The Story

Boeing is in deep trouble. Already exposed to significant pain because of its mishandling of the Boeing 737 Max, which caused revenues to plummet in 2019, the company is facing a mountain of pain with the Corona Virus decimating the airline business (Boeing's customers). I assume more pain the year to come, with revenues dropping even with the 737 Max returning to the fold and increased losses. After that, I assume that there will be higher growth, as airlines start playing catch up and buy more aircraft from a duopoly. I assume that margins will revert back to pre-2018 levels over the next 5 years and that during the next year, Boeing is exposed to a risk of failure, not so much because it will go out of business (it is too big to fail) but from needing a bailout from the government that is large enough to wipe out equity (as was the case with GM in 2009).

### The Assumptions

|                      | Base year | In 2020 | Years 1-5                    | Years 6-10 | After year 10 | Link to story                              |
|----------------------|-----------|---------|------------------------------|------------|---------------|--|
| Revenues (a)         | \$ 76,559 | -10.0%  | 15.00%                       | 2.00%      | 2.00%         | Duopoly, growing market                    |
| Operating margin (b) | -3.10%    | -5.0%   | -3.10%                       | 9.60%      | 9.60%         | Industry margins, also close to historical |
| Tax rate             | 25.00%    |         | 25.00%                       | 25.00%     | 25.00%        |  |
| Reinvestment (c)     |           |         | Sales to capital ratio: 3.80 |            | 20.00%        |  |
| Return on capital    | -11.78%   |         | Marginal ROIC = 76.00%       |            | 10.00%        |  |
| Cost of capital (d)  |           |         | 8.51%                        | 7.50%      | 7.50%         |  |

### The Cash Flows

|               | Revenues   | Operating Margin | EBIT       | EBIT (1-t) | Reinvestment | FCFF       |
|---------------|------------|------------------|------------|------------|--------------|------------|
| 1             | \$ 68,903  | -5.00%           | \$ (3,445) | \$ (3,445) | \$ (2,014)   | \$ (1,431) |
| 2             | \$ 79,239  | 4.73%            | \$ 3,751   | \$ 3,675   | \$ 2,719     | \$ 955     |
| 3             | \$ 91,124  | 9.60%            | \$ 8,749   | \$ 6,562   | \$ 3,127     | \$ 3,435   |
| 4             | \$ 104,793 | 9.60%            | \$ 10,061  | \$ 7,546   | \$ 3,596     | \$ 3,950   |
| 5             | \$ 120,512 | 9.60%            | \$ 11,571  | \$ 8,678   | \$ 4,136     | \$ 4,542   |
| 6             | \$ 135,455 | 9.60%            | \$ 13,005  | \$ 9,754   | \$ 3,932     | \$ 5,822   |
| 7             | \$ 148,730 | 9.60%            | \$ 14,280  | \$ 10,710  | \$ 3,493     | \$ 7,217   |
| 8             | \$ 159,439 | 9.60%            | \$ 15,308  | \$ 11,481  | \$ 2,817     | \$ 8,664   |
| 9             | \$ 166,773 | 9.60%            | \$ 16,012  | \$ 12,009  | \$ 1,930     | \$ 10,080  |
| 10            | \$ 170,108 | 9.60%            | \$ 16,333  | \$ 12,249  | \$ 878       | \$ 11,372  |
| Terminal year | \$ 173,510 | 9.60%            | \$ 16,659  | \$ 12,494  | \$ 2,499     | \$ 9,996   |

### The Value

|                                     |            |                                 |
|-------------------------------------|------------|---------------------------------|
| Terminal value                      | \$ 181,737 |                                 |
| PV(Terminal value)                  | \$ 82,610  |                                 |
| PV (CF over next 10 years)          | \$ 30,378  |                                 |
| Value of operating assets =         | \$ 112,988 |                                 |
| Adjustment for distress             | \$ 11,299  | Probability of failure = 20.00% |
| - Debt & Mnority Interests          | \$ 28,532  |                                 |
| + Cash & Other Non-operating assets | \$ 10,030  |                                 |
| Value of equity                     | \$ 83,187  |                                 |
| - Value of equity options           | \$ -       |                                 |
| Number of shares                    | 566.00     |                                 |
| Value per share                     | \$ 146.97  | Stock was trading at = \$127.68 |